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ABSTRACT

This study compared the effectiveness of intensive versus extensive courses to improve reading rate and comprehension. Subjects were 46 government employees who voluntarily enrolled in either a five-and-one-half-week course or in one of two eleven-week courses. The three courses were alike in hours of instruction, instructor, content, tests, and behavioral objectives. Differences between pre and post tests favored the extensive instruction groups, as did comparisons of differences for retention, comprehension, and vocabulary between groups. These results support the proposition that spreading out instructional time is more conducive to learning reading skills. (RL)

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# A Comparison of a Five and One Half and an Eleven Week Reading Course for Governmental Employees

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The investigators of this study had planned an eleven week reading improvement course that was to be offered to three groups of government employees. However, the government agency that requested the reading services asked that the first group receive instruction in five and one half weeks instead of eleven weeks due to scheduling problems. Research regarding the advantages of intensive five and one half week courses versus extensive eleven week courses is virtually non-existant. Brown (1963, p. 75-77) reported some findings that were not conclusive on this issue. But Brown's comparison of intensive five week versus extensive eleven week courses were not tested for statistical significance. A related issue is involved in Otto's (1973 p. 58) admonition that teachers should provide for spaced practice because " . . . it permits reactive inhibition to dissipate . . . " The investigators readily concluded that Otto's admonition could be observed and tested in the context of the intensive

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five and one half week courses as compared to the eleven week extensive course. Therefore the investigators sought to answer the following question: Is a 33 hour, five and one half week course as effective as a eleven week, 33 hour course in the improvement of reading rate and comprehension as measured by the McGraw-Hill basic Skill System Reading Test and the Nelson-Denny Reading Test? Answers to the question have implications for theory and practice.

## Procedures

Group I (the intensive instructional group) received 33 hours of instruction in five and one half weeks and Groups II and III received 33 hours of instruction in eleven weeks. Each group was made up of government employees who voluntarily enrolled in the courses.

There were 20 males and 26 females in the analysis. The educational status of the subjects ranged from high school to the doctorate. The ages of the participants ranged from 20 years to 63 years of age.

Ilika and Longnion (1977) reported that the three courses were alike in hours of instruction, instructor, content, tests, and behavioral objectives. A presentation on a specific skill was given at the first hour of each class. The second hour of instruction included application of the skill. The third hour of each class implemented a diagnostic, prescriptive, individualized program based on Livingston's (1973) behavioral objectives and College of the Mainland's reading program.

The Nelson-Denny Reading test and the McGraw-Hill Basic Skills System Reading Test were given as pre and post test measures of students' progress. The $t$ tests were applied to each group's data (Table1) to determine the statistical significance of mean gain scores on each subtest. In a second

analysis ANOVA and ANCOVA tests were applied to the data to test for statistically differences between the groups' performances on the subtest scores. The .10 level of confidence was set for each comparison of subtests (see table 2).

Insert Table 1 and Table 2 about here

## Results

Table 1 reveals comparisons of the intensive and extensive mean pre and post test reading scores. The Nelson Denny Reading Tests comparisons shows that the extensive groups attained more statistically significant differences than the intensive group by ratios of three to one and four to one. These results favor the extensive group.

The McGraw Hill significant differences were about even and do not clearly favor any of the groups.

Table 2 reveals that there are no significant differences among the three groups' performances on the Rate I, Rate II, and Flexibility scores of the McGraw-Hill Basic Skills System Reading Test. There is a statiscally significant difference between the three groups performance on the retention subtest. This difference is due to Group III's statistically significant gains.

Table 2 also reveals that there is a significant difference between the three group's performance on the vocabulary subtest of the Nelson-Denny Reading test. The difference is due to Group II's statistically significant gain. On the Comprehension subtest of the Nelson-Denny there are significant differences among the three groups' performances due to the statistically significant gain of Group III. There are no differences between the groups' performances on the rate subtest and total scores of the Nelson-Denny test.

## Discussion

In the first analysis, Nelson-Denny test results favor the extensive instruction groups if the number of statistically significant differences on pre and post tests are considered a major criterion of improvement.

The ANOVA and ANCOVA tests revealed no significant rate of reading measures. This comes as no surprise in view of Maxwell's research (1964). Maxwell's results support the notion that intensive instruction can increase rate of reading. It should be noted, however, that she did not find significant differences in vocabulary and comprehension.

The main finding of the second analysis supports extensive instruction in that the more difficult type skill gains in vocabulary, retention, and comprehension were primarily found significant in the extensive instruction groups. This can be interpreted to mean that Otto's (1973) recommendation to provide spaced practice, or spaced instruction, has favorable consequences in adult reading improvement courses.

An analysis of course records show that the extensive instructional groups read more books and journals outside of class instruction time. In contrast the intensive group course evaluations stressed the fact that they did not have sufficient time to do the course related activities. The importance of the above out of of class reading improvement activities have also been stressed by Brown (1963) and it seems that such activities are more apt to occur over a longer period of time with working adults.

## Conclusions

Within the limitations of small samples the findings of this investigation support reading improvement courses over extended periods

of time. Intensive practice (or courses) are prone to reactive inhibition as Otto has stated. Extensive courses give students greater opportunities to do out of class reading.

The importance of providing more time and practice for vocabulary and comprehension also emerged as an important element that contributes to adult reading improvement.

Further research should determine whether the above findings are typical of other types of reading improvement courses and other students.

Table 1

A Comparision of Intensive and Extensive Mean Pre and Post Test Reading Scores

| | Group I | | | Group II | | | Group III | | |
|---|---|---|---|---|---|---|---|---|---|
| | n | Mean Gain | t | n | Mean Gain | t | n | Mean Gain | t |
| McGraw-Hill: | | | | | | | | | |
| Rate I | 16 | 120.93 | 7.99 | 19 | 105.10 | 6.70* | 10 | 114.7 | 3.78** |
| Rate II | 16 | 72.46 | 2.87** | 19 | 64.53 | 6.16* | 10 | 40.6 | 1.77 |
| Flexi-bility | 15 | 56.46 | 3.37** | 19 | 43.42 | 2.30* | 10 | 61.2 | 2.74* |
| Retention | 16 | -.2 | -.14 | 20 | 1.35 | 1.90 | 10 | 1.8 | 2.48* |
| Skimming Scanning | 16 | 2.93 | 3.70* | 20 | - 15 | -0.23 | 10 | 3.5 | 1.44* |
| Comprehen-sion | 16 | -.68 | -1.32 | 20 | .50 | .79 | 10 | 3.5 | 6.01** |
| Total | 16 | 2.12 | 1.30 | 20 | 1.7 | 1.61 | 10 | 6.8 | 6.22** |
| Nelson-Denny: | | | | | | | | | |
| Vocabulary | 16 | 7.18 | 2.71* | 19 | 16.52 | 6.31* | 10 | 5.1 | 1.91* |
| Comprehen-sion | 16 | 5.13 | 1.67 | 19 | 5.36 | 1.39 | 10 | 8.0 | 4.47** |
| Rate | 16 | 52.37 | 1.24 | 19 | 157.26 | 5.55* | 10 | 154.9 | 4.42** |
| Total | 16 | 33.43 | 1.19 | 19 | | 2.94* | 10 | 13.2 | 4.57** |

* $p < .05$
** $p < .01$

Table 2

ANOVA and ANCOVA of Intensive and Extensive Groups' Pre and Post Test Reading Scores

| Test | Source | df | ms | F | p | Test Statistic |
|---|---|---|---|---|---|---|
| McGraw-Hill | | | | | | |
| Rate 1 | Groups | 2 | 1110.13 | .21 | .81 | ANOVA |
| Rate 2 | Groups | 2 | 3173.89 | .60 | .56 | ANOVA |
| Flexibility | Groups | 2 | 1271.84 | .28 | .75 | ANOVA |
| Retention | Groups | 2 | 15.73 | 2.5 | .09* | ANCOVA |
| | C1[a] | (1) | 30.81 | 4.9 | .03* | |
| | C2[b] | (2) | .11 | .02 | .89 | |
| | Error | 42 | 6.28 | | | |
| Skimming | Groups | 2 | 43.43 | 2.33 | .12 | ANCOVA |
| Comprehen sion | Groups | 2 | 32.09 | 7.87 | .01* | ANCOVA |
| | C1 | (1) | 42.47 | 10.74 | .002* | |
| | C2 | (1) | 34.22 | 8.66 | 005* | |
| | Error | 42 | 60.69 | 2.71 | .12 | ANCOVA |
| Nelson Denny | | | | | | |
| Vocabulary | Groups | 2 | 685.43 | 6.06 | .005* | ANOVA |
| | C1 | (1) | 264.62 | 2.35 | .13 | |
| | C2 | (1) | 855.39 | 7.61 | .003* | |
| | Error | 44 | 112.41 | | | |
| Comprehen- sion | Groups | 2 | 229.25 | 2.5 | .09* | ANCOVA |
| | C1 | (1) | 453.85 | 5.12 | .02* | |
| | C2 | (1) | 1.37 | .02 | .9 | |
| | Error | | | | | |
| Rate | Groups | 2 | 34097.36 | 1.916 | .2 | ANCOVA |
| Total | Groups | 2 | 1830.61 | .3023 | .8 | ANOVA |

*$p \leq .10$

a Group I versus Group II and Group III

b Group II versus Group III

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